

Repeat the process continuously for at least 550 seconds.

2.4.8.4 Verification of the ~~ADS-B Report Assembly Function Data~~Receiving Installation Time Processing and Formatting (subparagraph 2.2.8.4)

No specific test procedure is required to validate subparagraph 2.2.8.4.

2.4.8.4.1 Verification of ~~the Receiving Device Position~~—Latitude Precision Installations (subparagraph 2.2.8.4.1)

Purpose/Introduction

~~If the Range Monitoring Technique is used for locally unambiguous decoding of tracked emitter position, as specified in section 2.2.8.1.2, then the Receiving Device shall accept own position latitude (WGS-84) as follows:~~

- ~~a. Own position latitude shall be used to enable locally unambiguous decoding of position information encoded in ADS-B Airborne Position Messages (see paragraph 2.2.3.2.3) in accordance with sections A.7.4 through A.7.8.4 of Appendix A.~~
- ~~b. Own position latitude shall be used to enable locally unambiguous decoding of position information encoded in ADS-B Surface Position Messages (see paragraph 2.2.3.2.4) in accordance with section A.7.4 through A.7.8.4 of Appendix A.~~

Equipment:

~~Provide a method of simulating straight line trajectories for the Transmitting and Receiving Aircraft given the initial conditions of the Data Set. Also, provide a method of structuring and transmitting valid ADS-B Position and Velocity messages given the information as calculated by the simulation of Transmitting Aircraft, and the ability to time tag the transmission. Also provide the capability to supply positional information of the Receiving Aircraft to the ADS-B receiver via the appropriate interface.~~

Measurement Procedure:

~~If the ADS-B receiver does not use the Range Monitoring Technique to locally decode tracked emitter position in accordance with section A.7.4 through A.7.8.4 of Appendix A, then this test procedure does not apply.~~

Data:

~~Transmitting Aircraft~~

~~Initial Latitude—45 degrees North~~

~~Initial Longitude—45 degrees West~~

~~Velocity—600 knots East~~

~~Receiving Aircraft~~

~~Initial Latitude—47 degrees North~~

~~Initial Longitude 47 degrees West
Velocity 600 knots West~~

~~Step 1: Initialization~~

~~Provide the ADS-B receiving device with Airborne Position and Velocity messages such that the device is in the Track State and is outputting State Vector Reports. Continue to provide Position and Velocity messages for another 10 seconds.~~

~~Step 2: Pause for the Cause~~

~~Stop providing all ADS-B messages to the ADS-B receiving device for 24 seconds. Generate a valid ADS-B position message with any Latitude and Longitude data that is less than 160 NM away from the receiving aircraft, but is more than 200 NM away from the position reported in the last State Vector Report provided to the Output Storage Buffer.~~

~~Retrieve the resulting State Vector Report from the Output Storage Buffer. Verify that the reported Latitude is less than 10.375 meters from the Latitude that was encoded into the last provided Airborne Position Message. Verify that the reported Longitude is less than 10.375 meters from the Longitude that was encoded into the last provided Airborne Position Message~~

~~Step 3: Repeat~~

~~Repeat above procedures using Surface Messages in place of Airborne Messages.~~

~~**2.4.8.4.2 Verification of the Receiving Device Position Longitude (subparagraph 2.2.8.4.2)**~~

~~Appropriate test procedures for section 2.2.8.4.2 have been provided in section 2.4.8.4.1.~~

~~**2.4.8.4.3 Verification of the Receiving Installation Time (subparagraph 2.2.8.4.3)**~~

~~No specific test procedure is required to validate subparagraph 2.2.8.4.3)~~

~~**2.4.8.4.3.1 Verification of the Precision Installations (subparagraph 2.2.8.4.3.1)**~~

~~Purpose/Introduction~~

~~Receiving devices intended to generate ADS-B reports based on Surface Position Messages received from type 5 or 6 (see paragraph 2.2.3.2.3.1) equipment or Airborne Position Messages received from type 9 or 10 (see paragraph 2.2.3.2.3.1) equipment shall accept GPS/GNSS UTC Measure Time data via an appropriate interface. Such data shall be used to establish Time of Applicability data required in paragraphs 2.2.8.1.20 through 2.2.8.1.25, 2.2.8.1.27, 2.2.8.2.16, and 2.2.8.3.7.~~

UTC Measure Time data shall have a minimum range of 300 seconds and a resolution of 0.0078125 (1/128) seconds.

Equipment:

A method of providing Surface Position messages of TYPE 5 or 6 and Airborne Position messages of TYPE 9 or 10 to the ADS-B Receiving Device. Also, a method of providing appropriate messages to prompt output of State Vector reports to the Report Buffer. All messages must have the “TIME” subfield set to ZERO.

Measurement Procedure:

Step 1: Verification of UTC Measure Time Data.

Configure the ADS-B Receiving device to output reports by providing the appropriate messages at the nominal rate, providing GPS/GNSS UTC Measure Time data appropriately. Mark TIME ZERO as the Time of Applicability provided in the first report. Note also the time that the message was provided that prompted the output of the first report.

Continue to provide messages at the nominal rate, extracting the Time of Applicability from each report that is outputted. Verify that time of applicability is properly reported within the accuracies of the established system clock.

300 seconds after the message that prompted the first report, provide a valid Surface Position message with the TYPE subfield set to 5 or 6, and the TIME subfield set to ZERO.

Verify that in the resulting report, the Time of Applicability field does not reflect a value between TIME ZERO and 300 seconds.

Step 2: Repeat:

Repeat Step 1, using Airborne Position Messages of TYPE 9 or 10 instead of the previously specified Surface Position Messages.

2.4.8.4.3.2 Verification of the Non-Precision Installations (subparagraph 2.2.8.4.3.2)

Purpose/Introduction

Receiving devices that are not intended to generate ADS-B reports based on Surface Position Messages received from type 5 or 6 (see paragraph 2.2.3.2.3.1) equipment or Airborne Position Messages received from type 9, 10, 20 or 21 (see paragraph 2.2.3.2.3.1) equipment may choose not to use GPS/GNSS UTC Measure Time data if there is no requirement to do so by the end user of the ADS-B reports. In such cases, where there is no appropriate time reference, the Receiving device shall establish an appropriate internal clock or counter having a maximum clock cycle or count time of 20 milliseconds. The established cycle or clock count shall have a range of 300 seconds and